

DD/S 66 - 2539

J. T. J. H. Bldg 1 M10

10 MAY 1966

MEMORANDUM FOR: Assistant Deputy Director for Support
SUBJECT : Emergency Power for Agency Headquarters Facilities
REFERENCES : (a) Memo for D/L from ADDS dated 26 April 1966, same subject
 (b) Memo for DDS from D/L dated 24 March 1966, same subject
 (c) Memo for C/LSD/OL from C/RECD/OL dated 29 March 1966, subject: Operation of 2 - 2000 KW Emergency Generators at Headquarters Building
 (d) Memo for C/RECD/OL from C/Engineering Staff/OC dated 5 April 1966, subject: Langley Generator

1. This memorandum is for information only and is a progress and current status report of developments since the report in reference (b).

2. Reference (b) paragraph 4 indicated the action we were taking to improve and, to the extent possible, ensure the adequacy of our emergency power facilities at the Headquarters building. Further such reports on this subject will be furnished to you at not to exceed intervals of two weeks in accordance with reference (a).

3. On 23 March 1966, a second meeting was held with representatives of the Virginia Electric Power Company, the General Services Administration and the General Electric Company. Mr. Merle Suter, the General Electric Company's Engineer who was closely associated with the original emergency power design in our powerhouse, was subsequently employed by GSA, at our request, to design a system which would accomplish the objectives agreed upon at the meeting of 23 March 1966, as described in reference (c).

SUBJECT: Emergency Power for Agency Headquarters Facilities

4. A meeting is scheduled for Wednesday, 11 May 1966, with GSA, GE (Mr. Suter), and our engineering representatives, to review the proposed scheme which will, by then, have been completed by GE. If the proposed scheme is approved and the cost estimate is acceptable, it will be installed as soon as funds are made available to the Office of Logistics.

5. Reference (d) indicates the Office of Communications' general requirements for the replacement of the present no-break (uninterrupted power source) generator with an automatic-start unit. Engineers from this office are presently making a survey to determine the size of the unit needed, its application and location. This replacement is based on OC's indication that their equipment can sustain a 30-second break in power (the difference between using a UPS continuous unit and an automatic-start unit).

6. We must explore with the Watch Office and the seventh floor Operations Center the practicality of providing a backup generator for the existing 30 KW UPS. Our progress in this direction will be covered in an early report.

7. Cost estimates are not yet available on the UPS and/or automatic-start phase of this project. They will be developed as soon as possible so necessary action can be initiated to make funds available to this office.



JOHN F. BLAKE
Acting Director of Logistics

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Attachments:

Refs (a), (b), (c) and (d)

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DD/S 66-2258

26 APR 1966

MEMORANDUM FOR: Director of Logistics

SUBJECT : Emergency Power for Agency Headquarters Facilities

On 24 March you reported the results of tests on the emergency power supply at the Headquarters Building. The report indicated a number of problem areas and cited action being taken. The seriousness of a power failure accompanied by the deficiencies noted in our emergency power system cannot be overstated. It is therefore requested that you keep me advised at not to exceed intervals of two weeks on progress in this connection.

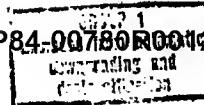


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Alan M. Warfield
Acting Deputy Director
for Support

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24 MAR 1966

MEMORANDUM FOR: Deputy Director for Support
SUBJECT: Emergency Power for Agency Headquarters Facilities
REFERENCE(S): (a) Memorandum from D/L to DD/S dated 30 November 1965, subject: Electrical Power for Agency Headquarters Facilities
(b) Memorandum from C/LSD/OL to C/REZCD/OL dated 8 March 1966, subject: Emergency Power at Headquarters Building

1. This memorandum is for information only.
2. Reference (a) proposed a test of the emergency power system which was held on 23 January 1966. The purpose of this memorandum is to advise you of the changes in the emergency power system presently under consideration and the status of the power system at the present time. Inasmuch as considerable work is still involved before firm recommendations can be made, this paper is intended as an interim report.
3. The following major components of the emergency power system were tested:
 - a. Emergency Diesel Electric Sets (2-2000 KW Units). The units provide emergency power when commercial power is out and take approximately 20-30 minutes before going into operation. During the test, considerable difficulty was experienced in paralleling the two generators. This difficulty could be attributed to a lack of skill on the part of the operators and perhaps to modifications made to the control wiring subsequent to the last test on 5 May 1963. These emergency generators are capable of assuming approximately one-half of the building's total load, excluding the central air-conditioning load. However, power will be provided for certain critical air ventilation and air conditioning.

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SUBJECT: Emergency Power for Agency Headquarters Facilities

b. Uninterrupted Power Systems (UPS) - 1-200 KW Unit and 1-20 KW Unit. These two units serve designated critical Agency facilities to provide power during the time interval necessary to activate the 2-2000 KW emergency generators and during the interval to switch back to commercial power when it is restored. These UPS generators essentially operate critical communication equipment (See Attachment A).

c. Distribution System. In the initial system design, power distribution was divided into emergency and non-emergency loads. The switching of these loads is controlled from the power house. Only those loads which were considered to be essential were placed on the emergency distribution system. As a result of the 23 January test, it has been pointed out that certain operations were without power and lighting. (See Attachment B). The Office of Logistics must review these comments with the interested activities to determine which requested emergency loads will be recommended as additions to the emergency distribution system.

4. We are presently taking the following actions:

a. Investigating the possibility of testing and operating the 2000 KW emergency generators without opening our main commercial breakers. We would synchronize (parallel) our generators with VEPICO and assume the building load. This would allow us to operate our generators at full capacity without a break in the power flow to the building. A meeting was held on 9 March and two other meetings are scheduled this month involving VEPICO, General Electric, GSA, and ourselves.

b. We have held discussions with representatives of the Office of Communications who have advised us that an automatic-start generator can be substituted for the 200 KW UPS unit which is a continuous "on-line" unit. The capacity of the automatic-start unit and the need for a second unit for "backup" are still being investigated.

c. The Office of Communications has indicated (paragraph 4.b. above) that its equipment can sustain a 30-second break in power (the difference between using a UPS continuous

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and an automatic-start unit). Therefore, we must explore with the Operations Center whether it can also change to an automatic-start system. If not, then the need for a second 30 KW UPS unit as "backup" must be explored.

d. We must provide GSA with priority ratings, to prevent the overloading of our emergency power system, together with any details required for additional connections to the emergency power panels.

5. We will keep you advised periodically as these items progress.

Signed: George E. Meloon

GEORGE E. MELOON
Director of Logistics

Attachments:

- A - Areas Served by UPS Units
B - Reference B

Distribution:

Orig. & 1 - Addressee

✓ 2 - OL/RECD (official)
(Chrono)

1 - OL Files

1 - OL/LSD

1 - D/L Chrono

1 - OL/RECD/UEB (Transmittal copy 3/28/66)

OL/RECD/ [redacted] (21 March 66)

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ATTACHMENT A

AREAS SERVED BY UPS UNITS

1. 200 KW UPS. This unit is connected to furnish power to:
 - a. The equipment in the main Signal Center on the first floor, southwest, and minimum lighting.
 - b. The Cable Secretariat, a multilith machine, and a couple of lights.
 - c. The equipment in the OSA Signal Center on the sixth floor, southwest, and minimum lighting.
 - d. The RF equipment in a room in the south Penthouse for the microwave lighting.
2. 30 KW UPS. This unit furnishes power to:
 - a. The seventh floor Operations Center as follows:
 - (1) Minimum lighting.
 - (2) Communications room - all equipment.
 - (3) LOX room - all equipment.
 - (4) Watch Office - house telephones as well as gray telephones and press tickers.
 - (5) Support room - house telephones and gray telephones.
 - (6) Situation Room - house telephones and gray telephones.
 - (7) Graphics area - two pieces of communications equipment.
 - (8) Task Force area - three pieces of communications equipment.
 - b. The gray telephone system including the cryptographic equipment in rooms 7F50 and 6F50 and ringing, lights, and hold on multiline telephone instruments.
 - c. The RF gear for the NSA antenna in the north Penthouse.
 - d. A multilith machine and several lights in the seventh floor OCA printing plant.

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29 MAR 1966

Chief, Logistics Services Division, OL

Chief, Real Estate & Construction Division, OL

Operation of 2 - 2000 KW Emergency Generators at Headquarters Building

REF : Memo to C/LSD/OL from C/RECD/OL dated 10 March 1966,
same subject

1. A meeting on subject was held on 23 March 1966 to coordinate thinking on a scheme to parallel (synchronize) the emergency generators with the VEPCO system in such a way as to permit the emergency generators to assume the building load with VEPCO staying on the line but not furnishing power to the building.

2. The following were present:

Mr. John LaPrade	VEPCO
Mr. Lew Johnson	VEPCO
Mr. Gail Lippy	VEPCO
Mr. Merle Suter	General Electric
Mr. Van Weaver	GSA
Mr. Guy West	GSA
Mr. Jim King	GSA
	CIA
	CIA

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3. A scheme of operations was discussed and agreed upon. Mr. Van Weaver, Buildings Manager, McLean Group, will request Mr. Merle Suter to accomplish the following:

a. Control drawings of the system will be brought up-to-date.

b. Propose a scheme to allow the emergency generators to operate as outlined above and permit the following sequences of operation:

(1) Engines will be paralleled with the VEPCO system.

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SUBJECT: Operation of 2 - 2000 KW Emergency Generators
at Headquarters Building

(2) When there is no passage of power to the building from the VEPCO system, the commercial breakers (VEPCO) will be opened.

(3) The emergency generators will then be carrying the building load.

(4) Emergency generators will then be paralleled (synchronized) with VEPCO and the commercial breakers closed.

(5) Emergency generators will then be shut down.

c. Indicate the proper relays, meters, etc., to insure and effect a safe operation.

4. If the propose scheme outlined in paragraph three above is accepted and installation is approved, commercial power will not be interrupted at any time in the accomplishment of the work. It is also understood that prior approval of CIA (through [redacted]) must be obtained by the Public Buildings Service before any installation and testing of the system is started.

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Distribution:

Orig. & 1 - Addressee

1 - Bldgs.Mgr., McLean Group

① - OL/RECD Chrono

1 - OL/RECD Project

1 - OL/RECD/UEB Chrono :

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OL/RECD/ [redacted] :vlo
(28 March 1966)

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Chief, Real Estate & Construction
Division, OC

5 APR 1966

Chief, Engineering Staff, OC

Langley Generator

1. In reference to the meeting held at RECD/OL on 1 March 1966 regarding the emergency power requirements for the Headquarters Signal Center, it is requested that action be taken to replace the present no-break unit with an automatic start unit to incorporate, but not be limited to, the following items:

- a. Size of unit to be based on load study which will consolidate all communications facilities.
- b. Adequate space provided for installation of future no-break unit.
- c. Remote dummy load provided with capacity equal to generator output and in switched steps of 50 KW each.
- d. Electrical distribution modified to provide complete isolation/by-pass of transfer switch plus tie in computer transformer with appropriate protective interlocks.
- e. Return to commercial power to be controlled by signal center personnel in the signal center.
- f. Transfer switch to operate in 1 cycle or less.
- g. Complete remote instrumentation provided for signal center.

2. Selection of generator equipment will be by OC to assure meeting present communications technical requirements. For technical assistance, contact [redacted] on extension [redacted]

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[redacted]

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OL 6 2167

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